

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CYTOPHOTOMETRIC DETERMINATION OF DNA IN PLASMOCYTIC NUCLEI OF THE
SPLEEN IN RATS WITH HORMONE DEPENDENT TUMORS -U-
AUTHOR--(05)-UMANSKIY, YU.A., ANTONYUK, R.D., GUDIMLEV KOVICH, K.A., LYSYUK,
L.P., ULYANOVA, T.N.
COUNTRY OF INFO--USSR

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SOURCE--VOP. ONKOL. 1970, 16(5), 61-5

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DNA, SPLEEN, RAT, TUMOR, HORMONE, SPECTROPHOTOMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605007/F07 STEP NO--UR/0506/70/016/005/0061/0065

CIRC ACCESSION NO--AP0139929

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139929

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FEMALE RATS (STRAIN WISTAR) WERE CASTRATED AT AGE 2 MONTHS AND A PART OF THE OVARY WAS IMPLANTED IN THE SPLEEN. IN 10 MONTHS AFTER THE IMPLANTATION, TUMORE OF VARIOUS LOCALIZATION AND SIZE DEVELOPED; THE RATS WERE THEN KILLED AND THE DNA CONTENT IN THE NUCLEI OF PLASMATIC CELLS OF THE SPLEEN WAS DETD. CYTOSPECTROPHOTOMETRICALLY. THE DNA CONTENT DEPENDED ON TUMOR LOCALIZATION WITH RESPECT TO THE SPLEEN. IN THE CONTROL ANIMALS, ANIMALS WITH TUMORS IN THE SPLEEN, ANIMALS WITH TUMORS DEVELOPED IN OTHER ORGANS BUT NOT IN THE SPLEEN, AND ANIMALS IN WHICH TUMORS DID NOT DEVELOP, THE DNA CONTENT IN EACH NUCLEUS OF SPLEEN PLASMATIC CELLS WAS 2.84, 2.41, 5.09, AND 5.72 ARBITRARY UNITS, RESP. FACILITY: RES. INST. EXPTL. CLIN. ONCOL., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 619:616.988.43-084.47

ANTONYUK, V. P., KRUGLIKOV, B. A., BARBASHOV, V. P., BASHKATOV, S. F.,
and MAKAREVICH, F. G., State Scientific Control Institute of Veterinary
Preparations

"Significance of Specific Prophylaxis of Foot-and-Mouth Disease"

Moscow, Veterinariya, No 9, 1971, pp 46-48

Abstract: Experience gained in the USSR and other countries proved that planned regular vaccination and revaccination (when used together with other veterinary sanitation measures) play an important role in the control of foot-and-mouth disease (FMD), particularly since the immunizing activity of the vaccine has been enhanced by the addition of saponin. Planned FMD vaccination was begun in the USSR in 1954, when 12.6 million head of cattle in zones of epizootic outbreaks of the disease were immunized. More than 132 million animals were vaccinated in 1969. As a result, the disease and its foci have been almost completely eradicated in the RSFSR, Ukraine, Belorussia, and Moldavia. Vaccination and revaccination are of particular importance in the republics of Central Asia, Transcaucasus, Northern Caucasus, and some oblasts of Kazakhstan, where the system of long cattle drives and the possible mixing of large masses of animals makes them

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ANTONYUK, V. P., et al., Veterinariya, No 9, 1971, pp 46-48

particularly susceptible to epizootic outbreaks. An analysis of available data on immunization in the republics of Uzbekistan, Kirgizia, and Tadzhikistan reveals that vaccination there is conducted in an irregular and haphazard manner, with the result that large number of animals remain unvaccinated. It is important that a plan for the vaccination and revaccination of cattle during February-March, and again in August-September, and of smaller animals during the months of November-December, and again in April and November of the next year be adopted. Planned and complete immunization must be regarded as an important component in the measures for the eradication of FMD.

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UDC 619:616.988.43:615.372

KRUGLIKOV, B. A., ~~ANNOTYUK, V. P.~~, YURCHENKO, A. N., TRUNILIN, S. N., and
KAZENOV, N. I., State Scientific Control Institute of Veterinary Preparations,
Kok-Yangak Veterinary Station, Oshskaya Oblast

"Transport and Storage of Foot-and-Mouth Disease Vaccines"

Moscow, Veterinariya, No 5, May 71, pp 49-50

Abstract: In storing and transporting foot-and-mouth disease vaccines with aluminum hydroxide formaldehyde composition, the optimum temperature conditions (from +1 to +5°C) must be maintained. This is important when the vaccines are transferred from the production plant to the various veterinary stations, particularly in the spring and summer, when mass immunizations of cattle are performed in the Soviet republics of Central Asia and in the Transcaucasian region. Polyethylene bags of various sizes were tested for this purpose. For the transport of 4-5 liters of vaccine, polyethylene bags 800 mm long and 500 mm wide were most practical. Two such bags are used, one inside the other. The inner bag should be 150-200 mm smaller than the external one. The internal bag contains the vaccine and is surrounded by ice (in the external bag). Both bags are closed by a plastic ring on top. The filled bags are placed in precooled ice chests and cooling boxes. The proposed bags were used under conditions

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KRUGLIKOV, B. A., et al, Veterinariya, No 5, May 71, pp 49-50

of +21, +25, and +25°C and kept the temperature of the control flacon at +4°C to +7°C for a period of 0-3 hours. When a freezing mixture (ice+salt) instead of ice is used, the temperature of the vaccine flacons is kept at 2-4°C, but for a shorter time period because of breakdown of the ice crystals. The proposed double bags of polyethylene are cheap, convenient to use at any veterinary station, and sufficient for bringing the vaccine to the immunization site.

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UDC 619.616.988.43

CHERNYSH, N. I., DARDA, P. N., and ANTONYUK, V. P.

Moscow, "Kolos" Chto Nuzhno Znat' o Yashchure (What You Should Know About Foot-and-Mouth Diseases), 1970, 56 pp

Translation:	Table of Contents	Page
Foot-and-mouth disease, a contagious disease		3
Historical sketch		4
Economic damage		5
Routes of spread and sources of the infection		7
Stability of foot-and-mouth disease virus		15
How animals catch foot-and-mouth disease		16
Clinical symptoms		17
Complications of foot-and-mouth disease		25
Pathological and anatomical changes		26
How to diagnose foot-and-mouth disease		27
How to differentiate foot-and-mouth disease from other diseases		29
Treatment		30
Specific prophylactic agents		33
Immunity against foot-and-mouth disease		36
Methods for preventing and eradicating foot-and-mouth disease		37
Final steps and removal of quarantine		54

USSR

CHEERNYSH, N. I., Moscow, "Kolos", What You Should Know About Foot-and-Mouth Diseases, 1970, 56 pp

Excerpt: The Stability of Foot-and-Mouth Disease Virus - Foot-and-mouth disease virus is resistant to environmental factors as well as to a variety of physical and chemical agents. Its stability is largely a function of the environment in which it happens to be.

Low temperature preserves the virus rather than destroying it. Many investigators have found that the virus remains active more than a year in frozen meat from animals that had to be slaughtered and in frozen manure. It survives more than 6 months on pastures during the fall and winter. On high-altitude pastures in the Tadzhik SSR where sick sheep grazed during the fall, the virus was found to retain its activity until the following May. As a result animals that came to graze there contracted the disease.

Even when dry the virus can survive a long time: more than 6 months in a haystack, about 140 days in bran, about 3 months in straw, 1½ months in dry grain chaff, and about 145 days on wool.

Virus adapted to baby rabbits remains active in dry form at 2 to 4°C for 420 days and at 22 to 32°C for 150 days. In salted meat kept at 1°C, foot-and-mouth disease virus was found in the lymph nodes after 124 days and on the hide after 1½ months. It can survive about 12 days in chilled milk and

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CHERNYSH, N. I., Moscow, "Kolos," What You Should Know About Foot-and-Mouth Diseases, 1970, 56 pp

about 45 days in refrigerated butter prepared from fresh cream, about 39 days (and in the fall over 100 days) in liquid manure and in stagnant water in barnyards, slaughterhouses, and meat-packing plants. It can also survive a long time on the clothing and shoes of milkmaids, cowhords and other persons tending sick cattle, on articles used in the care of cattle, and in the bedding material used in a foot-and-mouth disease focus.

A high temperature quickly kills the virus. Five minutes' boiling or 30 minutes' heating of infected milk and dairy products at 85°C safely disinfects them. The virus soon dies in a 1 to 2% hot alkali or formaldehyde solution.

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USSR

UDC 621.397

AVDEYEV, B. YA., ANTONYUK, YE. M., BELYAYEV, V. YE., SEMENOV, YE. I., FREMEKE, A. V., Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin)

Leningrad, IVUZ Priborostroyeniye, Vol XIII, No 3, 1970, pp 60-62

Abstract: It is shown that the method of adaptive quantization can be used when signal characteristics are right in multichannel telemetry systems to narrow the frequency band in each channel without a buffer memory. Expressions are given for the coefficients of contraction of redundant information and frequency band compression for the case of independent signals. The proposed procedure can be used to advantage in simplifying multichannel telemetry systems, improving reliability, and providing readings in real time.

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UDC 681.142.37

ANTONYUK, YE. M., BELYAYEV, V. YE., and SEMENOV, YE. I., Leningrad Electrical Engineering Institute imeni V. I. Ul'yanov (Lenin)

"One Method of Reducing Redundant Information in Measuring Systems"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, Vol 13, No 12, 1970, pp 11-14

Abstract: The introduction of approximation error computers in telemetry systems (TS) markedly complicates their design, reduces their operating reliability, and in many cases also reduces the interference resistance of the systems. A TS with the amount of information reduced not by preliminary calculation of the approximation error but by rational design of the telemetry frame is examined here. This TS permits transmission of the parametric code and the codes of the addresses of those transducers whose signals at a given instant are equivalent with an error that can be determined by quantizing the signal, levelwise, in a single telemetric frame. Two boundary value cases can be singled out in the operation of this system: 1) Instantaneous values of the transducer signals in the single telemetric frame are identical. The system will have the highest efficiency in this mode because all the transducer numbers and only one parameter will be transmitted. 2) Instantaneous values of transducer signals are distributed over all possible quantizing levels. The system efficiency in this case

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ANTONYUK, Ye. M., Investiya Vyschikh Uchebnykh Zavedeniy, Priborostroyeniye,
V6I 13, No 12, 1970, pp 11-14

is minimal. In each of these boundary value cases system efficiency depends on the ratio of the number of transducers and the number of the quantizing levels, where it is obvious that for the case when the number of transducers is less than the number of quanta the secondary boundary value case coincides with the operating conditions of the existing cyclic TS and the measuring information compression factor is always unity.

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UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

A
237633 REMOVAL OF SCALE or dense oxide layers
from a plurality of relatively small
articles made of ferrous metals or copper alloys,
is carried out by immersing the articles in an
aqueous medium containing 2.5-5% of HCl, 1.5%
of an emulsifier (OF-7 or OP-10), and 10-20%
of polishing grains (e.g. white electrocorundum),
at room temperature, and applying mechanical
vibrations for 15-40 mins. The weight ratio
articles: liquid is 1:2. The scale is effectively
and rapidly removed. 6.6.67, as 1161895/25-8
E.S. BLAGODETELEVA et alia. (16.6.69.) Bul. 8/
12.2.69. Class 67a. Int. Cl. B24d.

AUTHORS: Blagodeteleva, Ye. S.; Shermazanov, G.-I. K.; Kozlov,
A. Ye.; Antonyuk, Yu. K.; Solodkin, L. A. and
Tikhonov, V. Yu.

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UDC 615.9-057:612.84/.88

- ANTONYUZHENKO, V. A., SOLOVA, I. A., and ALIYEVA, H. K., Institute of Labor Hygiene and Occupational Diseases, Gor'kiy

"The Condition of Analyser Functions in Chronic Occupational Intoxication by Some Narcotic Chemicals"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 9, 1972, pp 19-22

Abstract: Gustatory, olfactory, vestibular, auditory, and visual analyser functions of 60 patients with pronounced (stage II and III) occupational intoxication with unsaturated and chlorinated hydrocarbons and methyl methacrylate were tested. The vestibular analyser displayed the clinically most distinctive shifts: Misses in the finger-to-nose test and instability in the Romberg stance were recorded. Half the patients had no vestibulomotor response to thermal nystagmus tests, while 1/3 had severe autonomic reactions. Optokinetic nystagmus tests indicated rapid exhaustion. Visual functions were worsened primarily due to abnormal oculomotor function. Though complaints of poor vision were infrequent, studies of optic chronaxie, dark adaptation, and flash discrimination threshold indicated changes in most patients. Complaints of problems with other analysers were absent, but tests indicated diminished hearing ability, heightened taste thresholds for bitter and sweet, and poorer olfactory sensitivity. With respect to vestibular disturbances, the data

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ANTONYUZHENKO, V. A., et al., Gigiyena Truda i Professional'nogo Zabolvaniya, No 9, 1972, pp 19-22

demonstrates inadequacy of central vestibular divisions and suggests involvement of brain stem nuclei. Disturbances of the remaining analysors primarily involve inadequacies in their cortical segments. Instability of central nervous mechanisms evidenced in visual analysors is probably intensified by oculomotor disturbances. Reticular formation dysfunction is implicated in the functional-dynamic nature of visual, auditory, gustatory, and olfactory disturbances.

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Extraction and Refining

USSR

UDC: 669.187.2:083.4

KAMARDIN, V. A., ANTOPOV, O. F., Zaporozh'ye

"Mass Transfer of Oxygen and Nitrogen During Refining of Steel by Melting in a Vacuum"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 49-56.

Abstract: Earlier works on the mechanism of vacuum-arc and cathode-ray melting have not clarified the mechanism of the process. Some works give preference to a mechanism in which oxygen is present in bonded form before it is removed with the gas phase, making it difficult to explain the role of the vacuum in the refining process. In this article, the thermodynamics of the reactions of refining of iron-based alloy melts to remove oxygen and nitrogen are studied. In the removal of oxygen, the primary reaction is $[C] + [O] = CO_{(g)}$, reactions involving the formation of gaseous monoxides of silicon and aluminum being less important. The possibility is shown of dissociation of nitrides at the metal-gas phase division boundary, with the formation of molecular nitrogen. A kinetic model is suggested for the process of refining metals to remove oxygen and nitrogen upon melting in a vacuum, based on which the analytic dependence of the degree of refining on the metal-gas interaction

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Kamardin, V. A., Antopov, O. F., Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 49-56.

surface and melting rate is produced. Based on the thermodynamic and kinetic regularities discovered, the mechanism of removal of nonmetallic inclusions in steel is analyzed.

1/2 326 UNCLASSIFIED PROCESSING DATE--0200T70
TITLE--DOUBLE MEMBRANE DILATOMETER -U-

AUTHOR--(85)-SARAYOVA, L.I., ANTROPOV, A.A., YEVREINOV, V.V., ENTELIS,
S.G., NOZHKOV, A.K.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 705-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DILATOMETRIC ANALYSIS, POLYMERIZATION, CHEMICAL REACTION RATE,
OLIGOMER, ADIPATE, POLYETHYLENE, ORGANIC ISOCYANATE, CHEMICAL LABORATORY
APPARATUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1992/0312

STEP NO--UR/0459/70/012/003/0705/0709

CIRC ACCESSION NO--AP0111506

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111506

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DILATOMETER CONSISTS OF 2 HERMETICALLY SEALED CHAMBERS SEPD. BY A MEMBRANE. THE POLYMN. IS CONDUCTE IN 1 CHAMBER AND THE OTHER IS CONNECTED TO A REGJLATING RECORDING SYSTEM, WHICH AUTOMATICALLY EQUALIZES THE PRESSURE ON BOTH SIDES OF THE MEMBRANE AND RECORDS ITS CHANGES. THE APP. WAS CHECKED BY DETG. THE RATE CONSTS. OF THE REACTION BETWEEN OLIGOMERIC POLY(ETHYLENE ADIPATE) AND ALPHA NAPHTHYLENE DIISOCYANATE, HEXAMETHYLENE DIISOCYANATE, OR 4,4PRIME, DIPHENYLMETHANE DIISOCYANATE, DILATOMETRICALLY AS WELL AS BY A CHEM. METHOD (H. E. STAGG, 1946).

UNCLASSIFIED

USSR

UDC 519.24

ANTOSHIN, V. A., RUBICHEV, N. A.

"Estimating the Error in Measurement of a Univariate Distribution Due to Instability of the Random Process Being Studied"

Metody Predstavleniya i Apparatur' Analiz Sluchayn. Protssesov i Poley. 3-y vses Simpozium. Sekts. 3, [Methods of Representation and Hardware Analysis of Random Processes and Fields. Third All-Union Symposium, Section 3--Collection of Works], Leningrad, 1970, pp 44-47, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V191 by G. Semenov).

Translation: A method is studied of experimental determination of the stationary model $p(x)$ of an unstable univariate distribution $p(x, t)$ with respect to one realization $v(t)$ of ergodic process $N(t)$. The function $\tilde{p}(x)$ is selected from the condition of achievement of the maximum time-averaged measurement of distance d between distribution rules $p(x, t)$ and $\tilde{p}(x)$:

$$\beta = \min_{\tilde{p}(x)} \frac{1}{T} \int_0^T d(p(x, t), \tilde{p}(x)) dt.$$

The value of β determines the quantitative measure of instability of process $N(t)$. Considering the systematic error of the statistical analyzer of the distribution ϵ_n , the total uncertainty of the result of measurement of ϵ are characterized by $\epsilon \leq (\epsilon_n + \beta)$. In order to illustrate the results produced,

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UDC 519.24

ANTOSHIN, V. A., RUBICHEV, N. A., Metody Predstavleniya i Apparatury Analiza Sluchayn. Protssessor i Poley. 3-y vses Simpozium. Sekts. 3, Leningrad, 1970, pp 44-47.

examples are studied of determining stationary estimates for the unstationary even distribution rule and unstationary normal rule in various metrics.

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USSR

UDC 519.281

ANTOSHIN, V. A., DOROGOVA, S. I.

"The Problem of Accuracy of Determination of Parameters of Univariate Distribution by Method of Comparison of Distribution Rules"

Metody Predstavleniya i Apparatur' Analiz Sluchayn. Protsessov i Poley. 3-y vses Simposium. Sekts. 3. [Methods of Representation and Hardware Analysis of Random Processes and Fields. Third All-Union Symposium, Section 3--Collection of Works], Leningrad. 1970. pp 65-69, (Translated from Referativnyy Zhurnal Kibernetika, No. 5, 1971, Abstract No. 5V146 by Ya. Shor).

Translation: A method of determining the parameters of a distribution by minimizing the "distance" between the distribution and a distribution with variable parameters is studied for the case of a univariate distribution. Two types of "distances" are studied for the case of sets of two-parameter distributions

with probability density $\frac{1}{a_2} p\left(\frac{x-a_1}{a_2}\right)$.

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1/3 029 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ANALYSIS OF THE ELASTIC AND INELASTIC SCATTERING OF 6-MEV PROTONS
ON NUCLEI OF AVERAGE ATOMIC WEIGHT -U-
AUTHOR--(05)-ANTROPOV, A.YE., VASILYEV, S.I., ZARUBIN, P.P., URLOV, B.N.,
PLAVKO, A.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 400-8
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PROTON SCATTERING, ELASTIC SCATTERING, INELASTIC SCATTERING,
WAVE MECHANICS, NUCLEAR MODEL, SPIN ORBIT COUPLING, NICKEL ISOTOPE,
ANGULAR DISTRIBUTION, SCATTERING CROSS SECTION, COMPOUND NUCLEUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1938/0245 STEP NO--UR/0048/70/034/002/0400/0408
CIRC ACCESSION NO--AP0105320
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105320

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SCATTER OF P WITH ENERGIES 3-20 MEV WAS STUDIED TO DET. LIMITS OF APPLICABILITY OF THE DISTORTED WAVE METHOD DURING THE P SCATTERING ON PRIME58 NEGATIVE64 NI NUCLEI, TO ELUCIDATE EXPTL. RESULTS ACHIEVED BY THE 6-MEV SCATTERING ON PRIME59 CO, PRIME58 NEGATIVE64 NI, PRIME63,65 CU NUCLEI BASED UPON 2 DISTORTED WAVE THEORIES AND THE HAUSER-FESCHBACK THEORY, NEGLECTING THE EFFECT OF INTERFERENCES BETWEEN DIRECT AND COMPD. SCATTERINGS. DURING THE APPLICATION OF THE OPTICAL MODEL AND THE DISTORTED WAVE MODEL, SPIN ORBITAL INTERACTIONS WERE NEGLECTED. WHEN CONSIDERING THE VOL. ABSORPTION ONLY, A MARKED DISAGREEMENT WAS FOUND BETWEEN EXPTL. AND THEORETICAL RESULTS IN DETG. THE ELASTIC SCATTERING CROSS SECTION. THE DESIRED RESULTS WERE ACHIEVED ONLY BY SELECTING SUITABLE PARAMETERS FOR THE OPTICAL MODEL. IN PRIME58,60 NI NUCLEI, A STRONG DEPENDENCE WAS VERIFIED FOR THE ANGLE DISTRIBUTION OF SCATTERED P ON THEIR ENERGIES. THE DISTORTED WAVE MODEL ALSO PROPERLY DESCRIBES THE INELASTIC SCATTERING OF 6-MEV P ON PRIME64 NI NUCLEI BY USING PARAMETERS OF THE OPTICAL POTENTIAL OBTAINED BY THE ANAL. OF THE ELASTIC SCATTERING. THE PRESENCE OF COMPD. PROCESSES WAS VERIFIED. THIS EFFECT MUST BE TAKEN INTO ACCOUNT BY VARYING PARAMETERS OF THE OPTICAL POTENTIAL. THE SHAPE OF THE ANGLE DISTRIBUTION FOR P WITH ENERGIES OF LARGER THAN 10 MEV REMAINS ESSENTIALLY UNCHANGED; HOWEVER, THE CROSS SECTIONS ARE STRONGLY INCREASED OWING TO WINGS OF A WIDE RESONANCE MAX. WHOSE FORMATION IS CONNECTED WITH AN ACTION OF THE COMPETITIVE P AND N CHANNELS DURING THE DECAY OF THE COMPD. NUCLEUS.

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PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105320

ABSTRACT/EXTRACT--THE ANAL. OF THE INELASTIC SCATTERING BASED UPON THE
HAUSSER-FESCHBACK THEORY SHOWED THAT FOR ACHIEVING DESIRED SPECTROSCOPIC
DATA ONE HAS TO INCREASE THE PRECISION OF MEASUREMENT OF THE
DIFFERENTIAL CROSS SECTIONS.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ELASTIC AND INELASTIC SCATTERING OF PARTICLES AND THE MODEL OF AN
EXCITED CORE IN THE A EQUALS 25-35 RANGE -U-
AUTHOR--(05)-~~ANTROPPOV, A.YE.~~, PLAVKO, A.V., ZARUBIN, P.P., KUDRYASHOV,
V.I., ORLOV, B.N.
COUNTRY OF INFO--USSR *A*
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 153-60
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--ELECTRON STRUCTURE, NUCLEAR MODEL, EXCITED NUCLEUS, ELASTIC
SCATTERING, INELASTIC SCATTERING, SODIUM ISOTOPE, MAGNESIUM ISOTOPE,
SULFUR ISOTOPE, CHLORINE ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAme--1988/0235 STEP NO--UR/0049/70/034/001/0153/0160
CIRC ACCESSION NO--AP0105311
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--14OCT79

CIRC ACCESSION NO--AP0105311

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ARE ANALYZED ON THE ELASTIC AND INELASTIC SCATTERING OF PARTICLES WITH EXCITATION OF LOWER LEVELS OF PRIME23 NA, PRIME24 MG, PRIME25 MG, PRIME26 MG, PRIME33 S, PRIME34 S, AND PRIME35 CL. ALSO, DATA OF MEASUREMENTS PERFORMED WITH SIMILAR TO 6 MEV P ARE INCLUDED. IT IS STUDIED TO WHAT EXTENT THE EXCITED CORE MODEL, THE MOST OFTEN USED MODEL, IS SUITABLE FOR THE DESCRIPTION OF THE NATURE OF LOW LEVELS OF ODD NUCLEI OCCURRING IN THE REGION OF A COMPLETE FILLING OF THE 1D-2S SHELL. AT THE CENTER OF THE SUBSHELL 1D SUBFIVEHALVES (PRIME23 NA, PRIME25 MG) WHERE THE DEFORMATION OF THE CORE OF ODD NUCLEI IS LARGE THE INTERRELATION OF N OR VACANCY WITH THE CORE IS NOT SO LARGE AS TO AFFECT THE CHARACTERISTIC FEATURES OF THE EXCITED CORE MODEL. IN ODD NUCLEI OCCURRING AT THE END OF THE SUBSHELL 1D SUBFIVEHALVES (PRIME27 AL) IN THE SUBSHELL 2S SUBONEHALF (PRIME29 SI, PRIME31 P), AND AT THE BEGINNING OF THE SUBSHELL 1D SUBTHREEHALVES (PRIME33 S, PRIME35 CL) THE INTERACTION OF THE PARTICLE OR VACANCY WITH THE CORE GOVERNS THE APPEARANCE OF THE CHARACTERISTIC FEATURES OF THE EXCITED CORE MODEL. IT OFFERS THE POSSIBILITY TO USE THE EXCITED CORE MODEL FOR THE INVESTIGATION OF THE STRUCTURE OF THE EXCITED STATES OF NUCLEI IN THIS REGION OF THE 1D-2S SHELL. FACILITY: LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

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1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ELASTIC AND INELASTIC SCATTERING OF PROTONS ON MAGNESIUM-24, AND
MAGNESIUM-25, AND MAGNESIUM-26 -U-
AUTHOR-(05)-~~ANTROPOV~~, A.YE., ZARUBIN, P.P., ORLOV, B.N., PLAVKO, A.V.,
SOROKIN, A.I.
COUNTRY OF INFO--USSR *A*
SOURCE--NAUK, SSSR, SER. FIZ. 1970, 34(1), 106-15
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ELASTIC SCATTERING, INELASTIC SCATTERING, PROTON SCATTERING,
MAGNESIUM ISOTOPE, ANGULAR DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0208

STEP NO--UR/0048/70/034/001/0106/0115

CIRC ACCESSION NO--AP0105284

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PROCESSING DATE--14OCT70

CIRC ACCESSION NO--AP0105284

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANGULAR DISTRIBUTIONS OF THE ELASTIC AND INELASTIC SCATTERING OF THE P ON PRIME24 MG, PRIME25 MG AND PRIME26 MG NUCLEI WERE MEASURED FOR THE ENERGIES 5.84, 5.94, AND 6.03 MEV. ALL AVAILABLE DATA ABOUT THE SCATTERING OF P ON THESE NUCLEI WERE CLASSIFIED AND SYSTEMIZED IN ORDER TO EXPLAIN THE CONTRIBUTION OF VARIOUS MECHANISMS IN THE PROCESS OF THE ELASTIC AND INELASTIC SCATTERING. FACILITY: LENINGRAD. GOS. UNIV. LENINGRAD, USSR.

UNCLASSIFIED

USSR

Instruments and Measurements

UDC 621.317.78:621.385.6

ANTROPOV, B. A., ANTROPOVA, L. KH., MORGACHEVA, G. A., KOTOSONOV, N. V.,
SHUVAYEV, A. G., Voronezh State University, Gomel' State University

"Problem of Utilizing the Reluctance Effect to Measure Microwave Transmitting Power"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 9,
1972, pp 1393-1397

Abstract: The possibility of using reluctance sensors to measure the microwave transmitting power is discussed, and experimental results are presented for the voltage caused by the reluctance effect as a function of the transmitting power on a frequency of 9,370 megahertz. The reluctance sensor, just as the Hall sensor is an indicator of the microwave power flux density and is a transmitting power meter. There is a good linear relation between the output voltage taken from the sensor and the magnitude of the transmitting power and the readings from a specimen depend on its position relative to the open end of the wave guide which defines the point nature of the specimen, that is characterizes the dependence of its readings on the microwave power distribution and the low distortion introduced by the specimen into the microwave power distribution. Both the theoretical and experimental studies indicate the possibility of creating wattmeters based on reluctance sensors with the

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ANTROPOV, B. A., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 9, 1972, pp 1393-1397

following advantages over the power meters used at the present time: 1) low inertia connected with the fact that the relaxation time of the current carriers is $\sim 10^{-12}$ seconds as a result of which it is possible to use these devices to measure the pulse power; 2) low dissipated power in the sensor operating in the transmitting power mode which makes it possible to measure high power levels; 3) simplicity of the measuring circuit.

2/2

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AA0052668

ANTROPOV

6AUR 0482

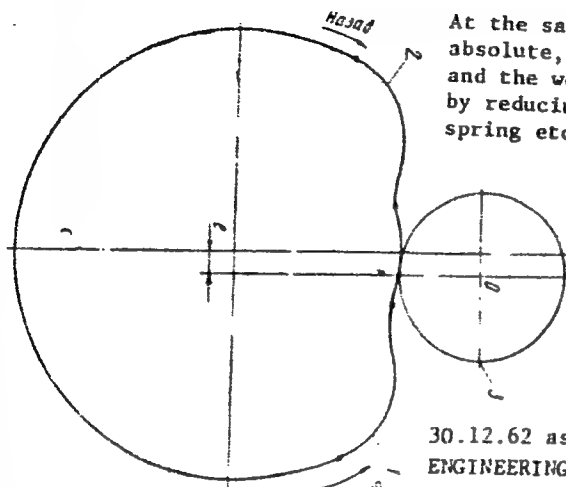
Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

241816 HIGH-PRESSURE FUEL PUMP DRIVE for marine two-
stroke internal combustion engine, comprising
pushrod interacting with cam washer on the reversing
distributor shaft, with forward and reverse working
profile, differing in the axis of the pushrod being
displaced relative to that of the washer towards the
forward profile, which is not symmetrical with the
reverse profile, being formed by different curves.
This enables the dimensions and weight of the drive
to be reduced. Working profile, being formed by
different curves. This enables the dimensions and
weight of the drive to be reduced. Working profiles
1 and 2 for forward and reverse are dissimilar. The
axis of the roller of pushrod 3, which is also the
axis of the fuel pump plunger, is displaced relative
to the washer axis to the extent "e". The normal
component of force acting on the pushrod from the
disc can be reduced by 20-25 per cent. in forward
motion, and increased to the same extent in reverse.

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AA0052668



At the same time these forces balance out in the absolute, so that wear on the washer is more even and the weight and size of the drive can be reduced by reducing weight and size of the roller, pushrod, spring etc.

30.12.62 as 819544/24-6.SOLOV'EV O.P.et al.BRIANSK
ENGINEERING WORKS.(1.9.69) Bul 14/18.4.69. Class 46c.
Int.Cl.F 02f.

Solov'yev, O. P.; Cherevchuk, V. I.; Antropov, G. A.
Bryanskiy Mashinostroitel'nyy Zavod

9/2

19821423

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PHOTONEUTRON CROSS SECTIONS FOR THALLIUM 203 AND THALLIUM 205 -U-
AUTHOR--(04)-~~MITROPOL~~, G.P., MITROPOL, I.YE., PROKHOROV, A.I., ZUSMAN, V.S.
COUNTRY OF INFO--USSR *A*
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 116-21
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--PHOTONEUTRON, EXCITATION CROSS SECTION, THALLIUM ISOTOPE, COMPUTER CALCULATION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY PEEL/FAKE--1988/0209 STEP NO--UP/004/770/034/001/0115/0121
CIRC ACCESSION NO--AP0105785
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--2 OCT 70

CINC ACCESSION NO--AP0105285

ABSTRACT/EXTRACT--(U) GP-9- ABSTRACT. THE YIELDS OF THE γ FROM THE REACTIONS (γ , n) AND (γ , $2n$) ON PRIME-203 TL AND PRIM-203 TL NUCLEI WERE MEASURED AT E PRIMEMAX. SUBGAMMA EQUALS 7-20 MEV. THE EXPTL. DETO. VALUES WERE USED TO CALC. THE CROSS SECTIONS OF THESE REACTIONS. THE CALC. WAS CARRIED OUT ON A COMPUTER BY THE PENFOLD LEISS METHOD WITH A 0.5 MEV STEP. THE RESULTS ARE PLOTTED AND DISCUSSED.

UNCLASSIFIED

USSR

UDC: 621.396.677.01

ZHOGLEV, Ye. A., ANTROPOV, N. I.

"Some Methods of Cutting Down the Effect of Phase Errors on the Radiation Patterns of Antennas Made up of Line Radiators With a Traveling Wave"

V sb. Antenny (Antennas-collection of works), Vyp. 9, Moscow, "Svyaz'", 1970, pp 51-52 (From RZh-Radiotekhnika, No 12, Dec 70, Abstract No 1785)

Translation: The authors investigate the effect which oncoming phase errors have on the radiation patterns of antennas which are made up of a single type of line radiators with a traveling wave. The radiation pattern is statistically evaluated for an antenna synthesized by first breaking up all its line radiators into a series of sections (zones), and then reshaping but this time with regard to the magnitude and sign of the phase distribution scatter in the zones (random pattern), and this pattern is also compared with the radiation patterns of ordinary antennas (without shaping). The radiation pattern is evaluated for different phase errors and for different numbers of divisions (zones) of the line radiators. On the basis of the statistical approach to the problem, final expressions are found for the average radiation pattern with respect to power, which can be used to estimate the error reduction in most of the cases which are encountered in practice. Ten illustrations, bibliography of two titles. Resumé.

1/1

JSSR

UDC 539.4

SOROKINA, N. A., LEBEDEV, D. V., UL'YANIN, Ye. A., ~~ANTROPOV, N. P.~~, (Moscow)

"Strength and Ductility of Chrome-Nickel-Manganese Steel as Functions of Carbon and Nitrogen Content in the 20-253°C Temperature Interval"

Kiev, Problemy Prochnosti, No 8, 1972, pp 89-93.

Abstract: The influence of carbon and nitrogen on the strength and ductility of chrome-nickel-manganese steel at low temperatures is studied considering stress concentrations. An increase in the content of carbon from 0.008 to 0.1% in the steel studied (hardened state) has little influence on strength and ductility determined on smoothed specimens and specimens with circular notches in the temperature interval studied. Test data from tensile testing of specimens with cracks at -253°C indicate a tendency of the steel studied toward increased strength with increasing carbon content from 0.008 to 0.03%. Increasing the nitrogen content in the hardened steel from 0.043 to 0.285% increases the strength significantly (by about 50%) in the 20-253°C interval, as determined on smoothed specimens, specimens with circular notches and cracks; ductility decreases, but even with 0.285% nitrogen, ductility is rather high. The sensitivity of the steel to stress concentration in the temperature interval studied at $K_t = 3.03$ is practically independent of carbon content between 0.008 and 0.1% and nitrogen content between 0.043 and 0.285%.

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USSR

UDC 539.4

SOROKINA, N. A., LEBEDEV, D. V., UL'YANIN, Ye. A., ANTROPOV, N. P., Kiev, Problemy Prochnosti, No 8, 1972, pp 89-93.

The impact toughness of the steel studied following tempering at 600-900°C is determined by the content of carbon and nitrogen and is significantly dependent on test temperature. In the hardened state, the toughness is high and little dependence on carbon and nitrogen content.

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USSR

UDC 539.4

TAVER, Ye. I., RYSKIN, A. M., KOPYLOV, A. K., SIDOROV, N. G., KRIGENSHLY, Ye. Yu., SUMIDIN, A. M., ANTOPOV, N. P., ANTONOV, E. I., Leningrad

"Strength of Welded Joints in High-Strength Stainless Steels at Cryogenic Temperatures"

Kiev, Problemy Prochnosti, No 6, 1972, pp 93-96.

Abstract: The influence of the geometry of welded seam made by austenitic wire on the strength of welded joints of martensitic stainless steels at cryogenic temperatures is studied. The influence of technological defects (such as under- and overheating) on strength of welded joints of two types of steels at low temperatures is studied. It is established that designers must consider both reduced strength of seam metal under normal conditions and impermissibility of any stress concentrators in the seam zone.

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USSR

UDC 539.5

TRANTSEVICH, Ya. V., POPOVA, L. S., POTAK, Ya. M., SUKHOTIN, A. M.,
GRIKUROV, G. N., ANTROPOV, N. P., Moscow, Tbilisi, Leningrad

"Study of Mechanical Properties of High Strength Stainless Steel of Transition Class EP288 [Kh16N6, SN-2A] at Cryogenic Temperature"

Problemy Prochnosti, No 10, 1971, pp 97-100.

Abstract: The purpose of this work was to study the properties of one of the most common chrome-nickel low-carbon steels in class EP288 at cryogenic temperatures. The studies were performed using experimental melts distinguished by their low carbon and chromium contents and varying contents of austenite in the steel structure. Heat treatment of the steel included hardening in water from 1,000°C, at which level dissolution of carbides occurs, cold treatment -70°C (2 hours) and tempering at 250°C (1 hour). The data indicated that type EP288 steel with the nominal composition, as well as all experimental melts except for one, has high ductility and impact toughness, including high impact toughness of specimens with cracks at down to -253°C. The nominal steel has high strength at both room and cryogenic temperatures, the level of which increases with decreasing test temperature.

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USSR

TRANTSEVICH, Ya. V., et al., Problemy Prochnosti, No 10, 1971, pp 97-100

It is interesting to note that the strength of EP288 steel determined under such rigid test conditions as rupture of specimens with fatigue cracks at -196°C is retained or even increased in comparison to the strength of smooth specimens.

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USSR

UDC 620.17

TAVADEE, P. N., GHEGURKOV, G. N., TRANTSEVICH, YA. V., SUMNGOTIK, A. M.,
ANTROPOV, N. P., and ROZATSIY, A. L.

"Estimating the Strength of Materials and Their Welded Joints at Cryogenic
Temperatures by the Method of Testing Contour-Supported Disks for Flexure"

Kiev, Problemy Prochnosti, No 1, Jan 72, pp 109-112

Abstract: A description is given of the design of an attachment for a tensile
testing machine for determining the strength of contour-supported disks by
bending tests. Results are presented for the testing of basic sheet material
and welded seams in the form of disks of the austenite-martensite class (steel
of the SK-M1 type) at temperatures of -196 and -253°C . The strength values
were determined, and a comparative analysis of the obtained results with data
concerning the strength of the basic metal and the welded seams was conducted.
Study of the disks led to the conclusion that breakdown takes place at their
point of contact with the punch in the zone of thermal influence. One table,
3 figures, 4 references.

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USSR

UDC 620.17:669-155.3:621.785.78.9

LEBEDEV, D. V., OVSIANNIKOV, B. M. and ANTROPOV, N. P., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin (TsNIIKHIMMET)

"Mechanical Properties of Nitrided Austenitic Steels at Low Temperatures"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 2, 1972, pp 10-15

Abstract: A study has been made of the effect of surface nitriding of specimens of Kh18N10T and Kh21N5AG7 (EP222) steels on their mechanical properties at +20, -196, and -253°C. The nitrided layer was 0.18-0.2 mm thick. It is shown that the supporting power of surface-nitrided Kh18N10T steel versus ordinary steel under linear state of stress is 20% higher within +20 to -253°C under static load conditions. Nitrided Kh18N10T steel is insensitive to stress concentration under three-dimensional state of stress and linear static loads at below-zero temperatures (as low as -253°C). Under dynamic bending, surface nitrided Kh18N10T steel exhibits high formability under three-dimensional state of stress in the deformation zone and is suited for use at below-zero temperatures (as low as -253°C). Surface nitrided Kh21N5AG7 steel has low formability under both static loads and dynamic bending within +20 to -253°C, is sensitive to

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USSR

LEBEDEV, D. V., et al, Metallovedeniye i termicheskaya obrabotka metallov,
No 2, 1972, pp 10-15

stress concentration and is unsuited for service under either linear or
volumetric state of stress and under above types of loads even at +20°C.
(4 illustrations, 1 table, 3 bibliographic references).

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USSR

UDC 621.039.53

SUKHOTIN, A. M., LANTRATOVA, N. YA., ANTROPOV, N. P., SAMOYLYUK, P. P.

"Corrosion Kinetics of Stainless Steels and Aluminum in N_2O_4 "

Dissotsiluyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb.
(Dissociating Gases as Heat Transfer Agents and the Working Medium of Power
Plants -- Collection of Works), Minsk, Nauka i Tekhn. Press, 1970, pp 115-121
(from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 50179)

Translation: The studies of the corrosion strength of stainless steel and aluminum alloys in N_2O_4 which have been performed demonstrated that during the process of preliminary treatment a passive film is formed on the surface of the stainless steel. This film has good protective characteristics, and permits a significant reduction in corrosion losses during the prestationary period at 50° C. A favorable consequence of passivation is reduction of the stationary corrosion rate by several times. There are 5 illustrations, 1 table and a 3-entry bibliography.

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USSR

UDC 621.385.5.002

ANTROPOV, V.D., NIKISHIN, V.I., NOVIKOV, YU.I., FULDEKOV, S.S., SHIYAK, A.A.

"Microwave Transistor Prepared By The Method Of Ion Implantation"

V sb. Novyye v tekhn. poluprovodn. proiz-ve (New Semiconductor Production Technology--Collection Of Works), Voronezh, Voronezh University, 1971, pp 12-157 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B425)

Translation: The production is described of a microwave n-p-n⁺ transistor with the use of a method of ion doping. The ion doping was conducted on IJU-3 equipment. The transistors were prepared on epitaxial Si films with a resistivity of 2 ohm.cm. B¹¹ and P³¹ were used as the doping admixture. Doping was done at room temperatures. Transistors obtained by the combined ion-diffusion method and by the ion doping method only were compared. It is shown that with the aid of the latter method transistors can be obtained with a frequency of 1-2 GHz with developed power on the order of 1 watt. 12 ref. S.I.

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USSR

UDC 621.315.592.3

RUDNEV, V. V., HASLENNIKOV, P. N., NAZAROV, V. A., ZOLOTAREVA, R. V.,
ANTROPOV, V. D.

"Ion Implantation -- New Method of Alloying Semiconductors"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Engineering.
Scientific and Technical Collection. Materials), 1970, vyp. 5, pp 148-149
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G433)

Translation: Results are presented of studying ion alloying of semiconductors on the basis of materials published in Soviet and foreign literature. The basic areas of application of ion beams in the technological process for manufacturing of semiconductor devices are investigated. The effect of penetration of the ions into amorphous and crystalline substrates is described in detail. The effect of the energy of the incident ions, the atomic mass of the substrate, and its crystallinity and orientation on the magnitude of the ion path in the solid state is investigated. A procedure for calculating the mean ion path is presented.

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USSR

UIC: 621.375.8

ANTROPOV, Ye. T.

"Spectral Characteristics of a Selective CO₂ Laser With Diffraction Grating"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 18, No 4, Apr 73, pp 621-624

Abstract: An experimental study is made of the properties of a laser in which a diffraction grating is used as one of the cavity reflectors. It is shown that when a grating is used in this way, a gain in spectral dilatation over a passive spectrometer can be expected. The author thanks N. N. Sobolev, P. L. Rubin, and V. I. Malyshev for interest in the work and constructive criticism, and also F. M. Gerasimov for furnishing the diffraction gratings and for interest in the work.

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USSR

UDC 621.373:530.145.6

ANTROPOV, YE. T., SILIN-BEKCHURIN, I. A.

"Satisfaction of the Similarity Laws for CO₂ Laser Gas Discharge"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Engineering. Scientific and Technical Collection. Gas Discharge Devices), 1970, vyp. 4 (20), pp 16-19 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D184)

Translation: Systematic measurements of the longitudinal electric discharge field were taken to check the proposed similarity relations for CO₂ (2) laser discharges. The data obtained indicate the degree of satisfaction of the similarity ratios with an accuracy of 8-12%.

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USSR

UDC: 681.3.06:51

ANTROPOV, Yu.

"Performing Operations With Codes and Incorporating Procedures in Machine Codes Into Programs Translated by the TAM-2(22) Translator"

V sb. Elektron-vychisl. tekhnika i programmir. (Computer Technology and Programming--collection of works), vyp. 3, Moscow, "Statistika", 1970, pp 23-27 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V735)

Translation: It is shown that the performance of operations with codes and incorporation of procedures in machine codes into programs translated by the TAM-2(22) translator is ensured by an auxiliary translating program. Author's abstract.

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1/2 008 UNCLASSIFIED PROCESSING DATE--09/11/70
TITLE--SUSPENDED CONVEYER -U-

AUTHOR--(02)--ANTROPOV, YU.S., TIKHOMIROV, A.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 239121

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI NO 10

DATE PUBLISHED--01AUG69

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PATENT, MATERIAL HANDLING EQUIPMENT, CONVEYOR TRANSPORTATION
SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0345

STEP NO--UR/0482/69/000/000/0000/0000

CIRC ACCESSION NO--4A0114935

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--09UCT70

CIRC ACCESSION NO--AA0114935

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUSPENDED CONVEYOR, COMPRISING CARRIAGES WITH HOOKS FOR THE LOADS WHICH MOVE ALONG A TRACK BY MEANS OF TRACTION CHAINS AND WHICH ARE PROVIDED WITH CROSSPIECES RESTING ON GUIDES PARALLEL TO THE TRACK AT THE POINTS OF TECHNOLOGICAL OPERATIONS WITH THE TRANSPORTED LOADS, AND WHICH ROTATE IN THE VERTICAL PLANE. THE DISTINGUISHING FEATURE OF THE PROPOSED SUSPENDED CONVEYOR IS THAT THE GUIDES (8) ARE FIXED ON THE AXES OF TWO HOISTING LOWERING BARS (9) AND PROVIDED WITH VERTICALLY CLOSED ROLLER CHAINS (10) WHICH SURROUND THE SPROCKETS AND REST ON THE GUIDES. THE LATTER HAVE FIXATORS TO LIMIT THE ANGLE OF THEIR ROTATION. AT THE END OF THE GUIDES THERE ARE STOPS (14) FOR FIXING THE CROSS ARM OF THE SUSPENSION WHEN CARRYING OUT TECHNOLOGICAL OPERATIONS. FACILITY: LIPETSKIY TRUBNYI ZAVOD.

USSR

Instruments and Measurements

UDC 621.317.73:621.385.6

ANTROPOV, B. A., ANTROPOVA, L. KH., MORGACHEVA, G. A., KOTOSONOV, N. V.,
SHUVAYEV, A. G., Voronezh State University, Gomel' State University

"Problem of Utilizing the Reluctance Effect to Measure Microwave Transmitting Power"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 9,
1972, pp 1393-1397

Abstract: The possibility of using reluctance sensors to measure the microwave transmitting power is discussed, and experimental results are presented for the voltage caused by the reluctance effect as a function of the transmitting power on a frequency of 9,370 megahertz. The reluctance sensor, just as the Hall sensor is an indicator of the microwave power flux density and is a transmitting power meter. There is a good linear relation between the output voltage taken from the sensor and the magnitude of the transmitting power and the readings from a specimen depend on its position relative to the open end of the wave guide which defines the point nature of the specimen, that is characterizes the dependence of its readings on the microwave power distribution and the low distortion introduced by the specimen into the microwave power distribution. Both the theoretical and experimental studies indicate the possibility of creating wattmeters based on reluctance sensors with the

USSR

ANTROPOV, B. A., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 9, 1972, pp 1393-1397

following advantages over the power meters used at the present time: 1) low inertia connected with the fact that the relaxation time of the current carriers is $\sim 10^{-12}$ seconds as a result of which it is possible to use these devices to measure the pulse power; 2) low dissipated power in the sensor operating in the transmitting power mode which makes it possible to measure high power levels; 3) simplicity of the measuring circuit.

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Acc. Nr:

AP0052087

ANTROPOVA

Ref. Code: DP0346

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhatrii imeni
S. S. Korsakova, 1970, Vol 70, Nr 3 ,
pp 382-388

ELECTROMYOGRAPHIC STUDIES IN PATIENTS
WITH INJURIES OF THE PERIPHERAL NERVES
DURING ULTRASOUND TREATMENT

A. P. Speranskiy, M. I. Antropova

The authors have studied by electromyographic methods the bioelectrical muscle activity in 124 patients with sequelae of different peripheral nerve injuries of the extremities. The characteristics of the electromyograms in the initial stage and during treatment, under singular ultrasound influence is being given. The authors report of the technique in ultrasound therapy. The achieved results are compared with the degree of the trauma and paresis of the extremities.

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19820625

ANTROPOVA, M.V.

Pedagogic
sciences

DAILY SCHEDULE FOR SCHOOL CHILDREN IN RUSSIA IN 1960-1961

Article by M.V. Antrova, Journal: *Journal of Soviet Education*, 1961, No. 1, pp. 1-10. (English translation of the original Russian article, which appeared in the *Journal of Soviet Education*, 1961, No. 1, pp. 1-10.)

The curriculum for future teachers is a complex one, which must be designed to meet the needs of the future teacher in the field of pedagogy and psychology, and to provide him with a solid foundation in the sciences of the social and behavioral sciences.

As a basis for the curriculum for future teachers, the author proposes a new program in the social and behavioral sciences, which is based on the principles of psychology and pedagogy. This program is designed to provide future teachers with a solid foundation in the sciences of the social and behavioral sciences, and to provide them with the necessary skills and knowledge for the teaching profession.

At the same time, the author also proposes a new program in the sciences of the social and behavioral sciences, which is based on the principles of psychology and pedagogy. This program is designed to provide future teachers with a solid foundation in the sciences of the social and behavioral sciences, and to provide them with the necessary skills and knowledge for the teaching profession.

For this purpose, the author proposes a new program in the sciences of the social and behavioral sciences, which is based on the principles of psychology and pedagogy. This program is designed to provide future teachers with a solid foundation in the sciences of the social and behavioral sciences, and to provide them with the necessary skills and knowledge for the teaching profession.

The daily schedule, efficiency, and morality among children was also studied in the schools of other cities of the USSR (Kirovskaya, Leningrad, Krasnodar, and others).

172 030 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CYTOCHEMISTRY OF CHROMOSOME PAIRING IN MEIOSIS. II.
CYTO SPECTROPHOTOMETRY OF HISTONE AND DNA IN SPERMATOCYTES I OF
AUTHOR--(02)--ANTROPOVA, YE.N., BOGDANOV, YU.F. A
COUNTRY OF INFO--USSR
SOURCE--TSITOLOGIYA 1970, 12(3), 289-96 (RUSS)
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CYTOLOGY, DNA, SPERMATOGENESIS, SPECTROPHOTOMETRY, BIOLOGIC
STAIN, PROTEIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0413 STEP NO--UR/9053/70/012/003/0289/0296
CIRC ACCESSION NO--AP0127984
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NU--AP0127984

ABSTRACT/EXTRACT--(U) GP-0- TESTES FROM CATERPILLARS WERE FIXED IN 10PERCENTRAL NEUTRAL FORMALIN FOR 12 HR. USING DOUBLE BEAM CYTOSPECTROPHOTOMETRY THE AMTS. OF DNA (FEULGEN REACTION) AND HISTONE (STAINING WITH FAST GREEN AT PH 8.1-8.2) IN THE CELL NUCLEI WERE ESTD. AT THE EARLY STAGES OF SPERMATOGENESIS. THE AMT. OF DNA WAS MEASURED AT WAVELENGTHS OF 540 AND 514 MMU, THE AMT. OF HISTONES AT 598 AND 579 MMU. EVIDENCE WAS OBTAINED THAT THE DNA SYNTHESIS TERMINATES IN THE PREMEIOTIC INTERPHASE, WHILE HISTONE SYNTHESIS PROCEEDS UP TO THE PACHYNEMA. BEGINNING WITH PACHYNEMA THE RELATION HISTONE:DNA IS 1. THE PRESUMPTION THAT DEFICIENCY IN HISTONE DURING THE EARLY PROPHASE I OF MEIOSIS IS A CONDITION FOR CHROMOSOME CONJUGATION WAS CONFIRMED. FACILITY: LAB. KARYOL., INST. MOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.375.82

AVTONOMOV, V. P., ANTROPOV, Ye. T., SOBOLEV, N. N., TROITSKIY, Yu. V.

"Separation of Rotational Lines of a CO₂-Laser by a Film Selector in a Resonator"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 3, Moscow, "Sov. radio", 1972, pp 112-115 (from RZh-Fizika, No 1, Jan 73, Abstract No 1D922)

Translation: A technique is proposed for the selection of rotational-vibrational lines of radiation and for producing a single-frequency oscillation mode for a CO₂-laser. Selection is achieved by tuning a reflecting interferometer formed by a thin absorbing film and one of the mirrors of the resonator. Separation of individual rotational-vibrational lines of CO₂ was achieved experimentally. The possibility of separation of rotational lines under retuning is shown. 8 ref. I. O. S.

1/1

USSR

UDC 576.995.2(477.3)

ANTSIBOR, S. S.

"Factors That Changed the Size of Parasitic Arthropod Populations in Nikolayevskaya Oblast in 1969"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 623-624

Abstract: Expansion of agricultural activity in Nikolayevskaya Oblast, a region of the Ukraine located on the Black Sea, interfered with the conditions of reproduction of ticks, horseflies, mosquitoes, and other insects, altered their local distribution, and reduced the opportunity for contact with man and farm animals. The plowing up of virgin land, reclamation of swamps, stabilization of gullies, and planting of shelterbelts decreased the breeding areas and numbers of the insects, while the introduction of city-type housing and establishment of cattle breeding farms and overall increase in the number of animals diminished the risk of humans coming in contact with blood-sucking insects. The abundance of blood-sucking insects was further reduced by extensive spraying of likely breeding places and by treating cattle with contact insecticides.

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USSR

ANTSIFEROV, V., KOLBENEV, Yu.

"Scientific and Technical Conference on "Powder Metallurgy Materials in Machine Building""

Kiev, Poroshkovaya Metallurgiya, No 6, Jun 72, pp 105-107.

Abstract: The scientific and technical conference was held at the Perm' Polytechnic Institute 26-30 November, 1971. The conference involved 130 persons from 31 cities of the Soviet Union, from 65 enterprises, scientific research organizations and educational institutions. The conference studied problems of the production of structural metal ceramic materials, methods of their processing and applications in machine building. Specific subjects covered in the reports included: dispersion-hardened alloys; studies of metal ceramic materials based on titanium; composite materials; problems of practical utilization of metal ceramic alloys in machine building; production of metal ceramic filter materials; production of metal ceramic structural steel; friction properties of metal ceramic materials; magnetically soft metal ceramic iron-nickel alloys; hot extrusion of iron-graphite into pipes; heat and chemical-heat treatment of metal ceramic materials; influence of hot pressing parameters on compacting and structure formation processes in powder

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USSR

ANTSIFEROV, V., KOLBENEV, Yu., Kiev, Poroshkovaya Metallurgiya, No 6, Jun 72, pp 105-107.

steel; problems related to the equipment used for the production of metal ceramic material; and a method of production of powders alloyed with chromium, nickel, molybdenum, etc., based on synthesis of the initial oxides and their subsequent reduction. A resolution passed by the conference noted the necessity of broad introduction of powder metallurgy to machine building.

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USSR

UDC: 621.381.41

ANTSIKEROV, V. V., DERLHI, N. M., PIVTSOV, V. S., UGOLNAYEV, V. D.,
FOLIN, K. G.

"Selection and Retuning Ruby Laser Frequencies in the Giant Pulse
Mode"

Novosibirsk, Avtometriya, No 5, 1972, pp 94-97

Abstract: Results are given of an experimental investigation of three-mirror and four-mirror variants in a superregenerative laser amplifier using an industrial ruby crystal with sapphire terminations, 12 or 18 cm long and 7 mm in diameter. In a second laser, also part of the experimental apparatus, the active element was also a ruby crystal with a sapphire envelope 12 cm long and a diameter of 7 or 9 mm. The basic idea of the apparatus is that the radiation of the first laser is applied to the second to produce a giant pulse. Radiation under this system was recorded with a photoelement type PEM-15, a type I2-7 oscillograph, and a Fabry-Pérot standard with a limited resolution of $2 \cdot 10^{-2}$ Å. A diagram of the apparatus is given, together with an oscillogram of the giant pulse and an interferogram of the combined spectra of the two lasers. It is noted that the possibility of controlling the
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USSR

UDC: 621.381.41

ANTOIFEROV, V. V., et al, Avtomeiriva, No 5, 1972, pp 94-97

duration of the giant pulse by changing the parameters of the first laser's resonator may be useful in several applications.

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USSR

UDC: 621.387.41

ANTSIFEROV, V. V., PIVTSOV, V. S., UGOZHAYEV, V. I., and FOLIN, K. G.

"Some Problems in the Dynamics of Solid-State Laser Oscillation"

Novosibirsk, Avtometriya, No 5, 1972, pp 98-105

Abstract: An explanation is given of the uncontrolled, unattenuated pulsations of a solid-state laser, and an expression is obtained for the coefficient of amplification as a function of the mode number. This is followed by a discussion of the thermal and mechanical perturbations in the active solid-state rod for which a resonator with plane mirrors is much more critical than one with spherical mirrors. The authors present the results of experiments they performed with a ruby laser having plane mirrors, in which oscillation in TEM₀₀₀ modes was obtained with the use of two diaphragms 1.4 mm in diameter on both sides of an active rod measuring 7 mm in diameter by 120 mm long with sapphire terminal, in a resonator more than 150 cm long. Oscillograms of the kinetics of the laser radiation are shown together with the radiation spectra. The results obtained in these experiments are compared

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USSR

UDC: 621.387.41

ANTSIFEROV, V. V., et al, Avtometriya, No 5, 1972, pp 98-105

with those of other experimenters. Authors of the present article express their gratitude to A. S. Kuch'yanov and A. V. Gayner for their assistance.

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- 3! -

Optics & Spectroscopy

USSR

UDC 621.373 : 535] : 548.0

ANTSIFEROV, V. V.; PIVTSOV, V. S., UGOZHAYEV, V. D., and FOLIN, K. G.

"Nonspiking Generation of Ruby Laser With Frequency Selection and Tuning"

Leningrad, Optika i Spektroskopiya, Vol 32, No 6, Jun 72, pp 1159-1162

Abstract: The authors report that they are the first to obtain a partially regular mode, stable over a wide pumping range and close to single-frequency, for the generation of a ruby laser with a frequency which is practically constant throughout the lasing time ($\sim 10^{-3}$ sec.) and with frequency tuning. The stable and reproducible mode is obtained by the compensated phase modulation method, with the use of series-produced ruby rods 120 mm long and 7 mm in diameter and a geometric cavity length of $L \geq 150$ cm. To smooth transient spiking, a KS-14 filter is placed in the cavity to provide weak negative, passive feedback. The Fabry-Perot etalon is used for frequency selection and tuning. The half-intensity width of the integral spectrum does not exceed 0.003 \AA , and the tuning is in the $5\text{-}\text{\AA}$ range. The generation mode is stably reproduced over a wide pumping range (up to four times above the

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USSR

ANTSIFEROV, V. V., et al., Optika i Spektroskopiya, Vol 32, No 6, Jun 72, pp 1159-1162

threshold). Half-intensity divergence does not exceed 3.5' (diffraction divergence 1.8'). Thus, the authors obtained a nonspiking ruby laser with close-to-diffraction divergence and a spectral width which is comparable to a He-Ne laser but considerably exceeds it in the tuning range and the possible spectral radiation density value.

The authors thank G. V. KRIVOSHCHIEV for his interest in the work and A. S. KUCH'YANOV and N. M. DERZHI for their assistance in the experiment.

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USSR

UDC 669.018.95

ANTSIFEROV, V. N., BOBROVA, S. N.

"Type V2Zh Metal Ceramic Alloy"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug, 1972, pp 21-24.

Abstract: This work presents an attempt to produce a V2Zh-type alloy by powder metallurgy methods. The chemical composition of the alloy produced is 2.2% C, 0.7% Si, 18% Cr, 16% Mo, remainder Fe. The microstructure of the alloy is distinguished by the homogeneous fine-grained structure, and high hardness of structural components, greater than the microhardness of the phases of cast V2Zh alloy. Optimal modes for the manufacture and heat treatment of the alloy are suggested.

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USSR

UDC 621.762.01(088.3)

ANTSIFEROV, V. N., and MAKSIKOVA, T. N., Perm' Polytechnic Institute

"P/W Alloy"

USSR Authors' Certificate No 268657, Cl. 40b 27/00; 40b, 1/04, (C 22c 27/00, C 22c 1/04), filed 14 Feb 69, published 9 Jul 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G387P by A. Epik)

Translation: The chromium-base, Fe- and W-containing heat-resistant P/W alloy is unique in that, in order to enhance physicochemical properties, ZrO_2 is put into it, and components are taken in the following ratio (in %): Fe 15-30, W 5-10, ZnO_2 3-7, Cr the balance. The alloy is obtained by pressing the powder mixture and sintering at 1300-1400° in a stream of dry H_2 . The alloy has the following properties: $\sigma_B = 45-50$ kg/sq mm, $\delta = 0\%$, notch sensitivity = 0.1-0.3 kgn/sq cm, heat resistance at 1200° 9.0 kg/sq mm, $\delta_{1200} = 4\%$. In addition to high physicochemical characteristics, the alloy possesses good technological efficiency and machinability.

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USSR

UDC 621.762:669.018.24
(033.8)

ANTSIFEROV, V. N., CHEREPANOVA, T. G.

"Cermets Antifriction Alloy"

USSR Author's Certificate No 272563, Filed 24 Dec 68, Published 31 Aug 70,
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G461P)

Translation: A cermets antifriction alloy based on Fe containing carbon, Cr, Mo, and Si is introduced. In order to improve the mechanical properties, the components are in the following ratios (in %): C 0.8-0.9, Cr 4-5, Mo 2-5, Si 0.25-2.5, and the rest Fe.

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USSR

UDC 621.5

ANTSIFEROV, V. N., and POLYAKOV, V. A., Perm' Polytechnical Institute

"Effect of Dispersion Inclusions of Al_2O_3 on the Shrinkage of Nichrome During Sintering"

Kiev, Poroshkovaya Metallurgiya, No 11, Nov 70, pp 22-27

Abstract: It is shown that the conditions of preparing compositions on a nichrome base containing dispersion inclusions affect the flow of the sintering process. A dependence was established between the creep rate of the sintering process and the inter-particle interval. Powders of chemically pure aluminum oxide of Al_2O_3 modification and nichrome powder of the following composition (wt. %): nickel -- base, Cr -- 21.73; Ti -- 0.02; C -- 0.07; Si -- 0.02; Fe -- 0.09; Mn -- 0.05; and S -- 0.004 were used in the work as the original materials.

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1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF HIGHLY DISPERSED OXIDE INCLUSIONS ON THE
RECRYSTALLIZATION OF NICHROME -U-
AUTHOR-(03)-ANTSIFEROV, V.N., SALNIKOV, B.V., POLYAKOV, V.A.
COUNTRY OF INFO--USSR A
SOURCE--IZVEST. V.U.Z. TSVETNAYA MET., 1970, (2), 137-139
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, CRYSTALLIZATION, COLD WORKING,
METAL WORKING, OXIDE, NICHROME ALLOY, ALUMINUM OXIDE, ZIRCONIUM OXIDE,
METAL HEAT TREATMENT, HARDNESS, METAL INCLUSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1499 STEP NO--UR/0149/70/000/002/0137/0139
CIRC ACCESSION NO--AT0130428
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0130428

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RECRYSTALLIZATION OF NI-CR ALLOYS CONTG. VARIOUS PROPORTIONS OF HIGHLY DISPERSED OXIDES (ZRO SUB2 AND AL SUB2 O SUB3) WAS STUDIED BY X RAY DIFFRACTION AND HARDNESS AND MICROHARDNESS MEASUREMENTS AFTER HOT EXTRUSION, AND AGAIN AFTER ORDINARY COLD WORKING. HOT EXTRUSION OF THE OXIDE CONTG. MATERIAL PROMOTED THE CREATION OF A STABLE STRUCTURE NOT SOFTENING AT HIGH TEMP. (700DEGREESC). COLD WORKING, HOWEVER, DISRUPTED THE STABILITY OF THE HOT EXTRUDED MATERIAL.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SINTERED METAL ANTIFRICTION MATERIAL -U-
AUTHOR--(03)-ANTSIFEROV, V.N., CHEREPANOVA, T.G., KHUDENKIKH, N.N.
COUNTRY OF INFO--USSR **A**
SOURCE--U.S.S.R. 263,161
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METALLURGIC PATENT, ANTIFRICTION ALLOY, SINTERED METAL, METAL
POWDER, CHROMIUM, CARBON, COPPER, IRON, MOLYBDENUM COMPOUND, SULFIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1055

STEP NO--UR/0432/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130090

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130090

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A HIGH STRENGTH POWDER
METALLURGICALLY PREPD. ANTIFRICTION MATERIAL CONSISTED OF CR 2-4, C 2-4,
CU 1.5-2.5, MOS SUB2 4.6 WT. PERCENT, AND THE REST FE. FACILITY:
PERM POLYTECHNIC INSTITUTE.

1/2 037 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--COMPLEX ALLOYED SINTERED METAL IRON BASE ALLOYS WITH HIGH ANTI
FRICTION AND MECHANICAL PROPERTIES -U-
AUTHOR-(02)-ANTSIFEROV, V.N., CHEREPANOVA, T.G.

COUNTRY OF INFO--USSR **A**

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (1), 54-59

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS

TOPIC TAGS--MECHANICAL PROPERTY, IRON ALLOY, LUBRICATING OIL, BRONZE,
DUCTILITY, AVIATION GASOLINE, JET FUEL, ANTIFRICTION MATERIAL, SINTERED
METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0157

STEP NO--UR/0369/70/006/001/0054/0059

CIRC ACCESSION NO--AP0129413

UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129413

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANTI FRICTION AND MECHANICAL PROPERTIES OF COMPLEX ALLOY SINTERED METAL FE BASE ALLOYS INITIALLY DERIVED FROM PURE FE OF THE CARBONYL TYPE WERE STUDIED. THE ALLOYS IN QUESTION EXHIBITED PARTICULARLY HIGH STRENGTH AND DUCTILITY AND EXCELLENT ANTI FRICTION CHARACTERISTICS WHEN WORKING IN CONTACT WITH OIL AND AVIATION FUEL. THE ANTIFRICTION AND ANTI CORROSION PROPERTIES OF THESE ALLOYS WERE FURTHER IMPROVED BY IMPREGNATING THEM WITH A SPECIAL TYPE OF BRONZE.

UNCLASSIFIED

USSR

A

UDC: 621.762

ANTSIFEROV, V. N., and CHEREPANOVA, T. G., Perm' Polytechnic Institute

"Iron-Base Alloyed Composite Compacts with Higher Antifriction and Mechanical Properties"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 1, Jan-Feb 70, pp 54-59

Abstract: The mechanical, antifriction, and corrosive properties of carbonyl iron-base powder metal compacts alloyed with carbon, chromium, molybdenum, and silicon were studied. It was shown that the addition of alloying elements (up to an optimum value) raises the strength properties of powder metal alloys. The highest tensile strength (60-87 kg/mm²) was found in alloys with a maximum total of alloying elements of 7--10%. Further increase in alloying elements decreased the strength properties due to the formation of a more heterogeneous structure and an increased amount of carbides and intermetallics. Alloying elements affect the plastic properties in a similar fashion. The experiment involved additional sintering and annealing as well as impregnating with Br-10 bronze alloys to increase the impact strength. The friction counterparts were made from Kh12M steel with a surface finish of class 11. Spindle oil and TS-1 aviation fuel were the lubricants. The experimental results suggest that composite sintered powder metal alloys with

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USSR

AMISITEROV, V. N. and CHEREPANOVA, T. G., Fiziko-Khimicheskaya Mekhanika Materialov,
Vol 6, No 1, Jan-Feb 70, pp 54-59

Improved antifriction properties, impregnated with Br-10 alloy, may be used as
antifriction materials for parts intended for work in friction under impact
loads in oil and TS-1 aviation fuel in pairs with steels possessing high hardness
and wear resistance.

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PHYSICS
Acoustics

SECRET

USSR

ANTSYFEROV, M. S., ~~ANTSYFEROVA, N. G.~~, KAGAN, YA. YA.

"Seismic-Acoustical Studies and the Problem of Predicting Dynamic Phenomena."

Seysmoakusticheskiye issledovaniya i problema prognoza dinamicheskikh yavleniy
(cf. English above), Moscow, "Nauka", 1971, 136 pp, ill., 50 k (from Izv-
Fizika, No 3, Mar 72, Abstract No 3Zh461 K)

Translation: The monograph covers the theoretical foundations of the seismic-acoustical method of predicting dynamic phenomena in mining. The method has been widely used in the Donbass. Seismic-acoustical observations keep track of crack formation in the coal layer under the action of pressure. An intensification of the process of crack formation indicates an unstable state of the layer and a growing danger of dynamic phenomena. This makes it possible to carry out seismic-acoustical predictions. Seismic-acoustical equipment is described in the monograph and the physical foundations and the theory of the method are given. Crack formation is considered as a random process, and the statistical laws of this process and their use in the practice of continuous prediction of the danger of dynamic phenomena are described. Analogies between seismic-acoustical processes accompanying dynamic phenomena in mines and earth-

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USSR

ANTSYFEROV, M. S., et al, Seysnoakusticheskiye issledovaniya i problema proro-
noza dinamicheskikh yavleniy, Moscow, "Nauka", 1971, 136 pp, ill., 50 k

quakes are discussed, and the potentialities of seismic-acoustical prediction
of local earthquakes are shown. 102 ref. Resume.

a/c

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Acoustics

UIC 534

USSR

ANTSYPEROV, M. S., ~~ANTSYPEROVA, N. G.~~, KAGAN, YA. YA.

"Seismic-Acoustical Studies and the Problem of Predicting Dynamic Phenomena"

Seysmoakusticheskiye issledovaniya i problema prognoza dinamicheskikh yavleniy
(cf. English above), Moscow, "Nauka", 1971, 136 pp, ill., 50 k (from *Enzh-Fizika*, No 3, Mar 72, Abstract No 3Zh461 K)

Translation: The monograph covers the theoretical foundations of the seismic-acoustical method of predicting dynamic phenomena in mining. The method has been widely used in the Donbass. Seismic-acoustical observations keep track of crack formation in the coal layer under the action of pressure. An intensification of the process of crack formation indicates an unstable state of the layer and a growing danger of dynamic phenomena. This makes it possible to carry out seismic-acoustical predictions. Seismic-acoustical equipment is described in the monograph and the physical foundations and the theory of the method are given. Crack formation is considered as a random process, and the statistical laws of this process and their use in the practice of continuous prediction of the danger of dynamic phenomena are described. Analogies between seismic-acoustical processes accompanying dynamic phenomena in mines and earth-

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USSR

ANTSYFEROV, M. S., et al, Seysmoakusticheskiye issledovaniya i problema prir-
noza dinamicheskikh yavleniy, Moscow, "Nauka", 1971, 136 pp, ill., 50 k

quakes are discussed, and the potentialities of seismic-acoustical prediction
of local earthquakes are shown. 102 ref. Resume.

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USSR

ANTSUT, V. A., DODONOV, A. G. and FEDOTOV, V. V.

"One Method of Solution of the Problem of the Minimum Flow"

Gibrid. Vychisl. Tekhn. i Elektronika [Hybrid Computer Equipment and Electronics -- Collection of Works], Kiev, Nauk. Dumka Press, 1972, pp 445-455
(Translated from Referativnyy Zhurnal Kibernetika, No 2, 1973, Abstract No 9V520).

Translation: The flow of the minimum quantity satisfying the conditions $z(i, j) \geq r(i, j)$ is sought in a fixed oriented network, where $r(i, j)$ represent the fixed throughput capacities of the arc. The method of reduction of this problem to the problem of maximum flow is described in detail. The search for the minimum flow consists of the following three stages: 1. A certain permissible flow is sought, such that $x(i, j) \geq r(i, j)$ in all arcs (i, j) . 2. The residual throughput capacities $\Delta x(i, j) = x(i, j) - r(i, j)$ are calculated and the maximum flow $\bar{x}(i, j)$ is constructed (for example with a Ford-Fulkerson algorithm) such that $x(i, j) \leq \Delta x(i, j)$ on all arcs (i, j) . 3. The desired minimum flow is found as follows $x_{\min}(i, j) = x(i, j) - \bar{x}(i, j)$.
This method agrees with a method presented (in shorter form) in a book of K. Berzha (RZhMat, 1963, 7A314K, pp 88-89).
Ye. Levner

1/1

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Food Technology

UDC 597.0/5-14

USSR

ANTSYSHKINA, L. M., KIRILENKO, N. S., RYABOV, F. P., and MEL'NIKOV, G. B.,
Dnepropetrovsk State University

"Dynamics of the Relative Size and Weight of the Viscera in *Tilapia mossambica*
Peters Fed *Chlorella*"

Moscow, Voprosy Ikhtiologii, No 2, 1971, pp 345-348

Abstract: In 10-month aquarium experiments, *Tilapia mossambica* Peters was given granulated food containing different percentages of *Chlorella* and other organisms (*Daphnia*, yeasts) or nongranulated food not containing *Chlorella*. The fishes given *Chlorella*-containing granulated food exhibited greater weight gains and linear growth than did the fishes fed nongranulated food not containing *Chlorella*, and the physiological changes in the former were fewer than in the latter. Moreover, the food with a high *Chlorella* content (granules containing 70 to 100% *Chlorella*) had less effect on the relative size and weight of the liver, gallbladder, spleen, heart gonads, etc. than did food with a low (30%) *Chlorella* content, nongranulated food, or food not containing *Chlorella*.

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Veterinary Medicine

USSR

UDC 619:616.981.452+636.4

PYATROW, V. F., and ANTSUKOV, M. A.

"Immunogenesis Indicators in Pigs Vaccinated Simultaneously Against Aujeszky's Disease, Paratyphoid and Pasteurellosis"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Sel'skokhozyaystvennykh Nauk, No 1, 1972, pp 121-125

Abstract: It has been established that the phagocytic activity of leucocytes increased not earlier than 15 days following the third inoculation of young pigs against Aujeszky's disease, paratyphoid, and pasteurellosis with a complex of three vaccines or each one given individually. The quantity of leukocytes maximally saturated with glycogen in the same pigs increased to a different degree 15 days after each vaccination. The amount of RNA in the blood lymphocytes did not change. The concentration of RNA in blood cells of 10-day-old young pigs was considerably higher than in older pigs. Preventive properties of the blood serum against pasteurellosis appeared 15 days after the third inoculation and were effective for 105 days (duration of observation) in young pigs vaccinated only against pasteurellosis. In piglets vaccinated against all three infections, the preventive properties of the blood

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USSR

PYATROW, V. F., and ANTSYUKOW, M. A., Izvestiya Akademii Nauk BSSR, Seriya Sel'skokhozyaystvennykh Nauk, No 1, 1972, pp 121-125

serum against paratyphoid appeared 7 days after the first immunization, the same as for pigs vaccinated only against paratyphoid. These properties were much more pronounced 15 days after the third vaccination.

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1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PULSE PILE UP FOR A PRECISION AMPLITUDE SPECTROMETER WITH RC
FILTERS -U-
AUTHOR-(02)-ANTYUKHOV, V.A., SEMENOV, B.YU. *A*
COUNTRY OF INFO--USSR
SOURCE--(JINR P13 4979) LAB. OF NUCLEAR PROBLEMS. 1970. 16P. DEP CFSTI
(U.S. SALES ONLY)
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--PULSE HEIGHT ANALYZER, RADIATION SPECTROMETER, SIGNAL
GENERATOR, SIGNAL GENERATOR, COUNTING CIRCUIT, FILTER CIRCUIT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REF/FRAME--3001/2169 STEP NO--UR/0000/70/000/000/0016/0016
CIRC ACCESSION NO--AT0127533
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--ATO127533

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DEVICE FOR GENERATING A SIGNAL FOR BLOCKING THE TRIGGERING OF THE AMPLITUDE ANALYZER IN THE CASE OF PILE UP EVENTS (THE PILE UP INSPECTOR) IS DESCRIBED. THE PERFORMANCE REQUIREMENTS ARE CONSIDERED, THE FUNCTIONAL AND PRINCIPAL CIRCUITS ARE GIVEN, AND THE RESULTS OF EXPERIMENTS ARE DISCUSSED. THE LOGARITHMIC DEPENDENCE OF THE BLOCKING PULSE DURATION UPON THE INPUT SIGNAL AMPLITUDE, THE ABSENCE OF THE SELF DEAD TIME, A WIDE DYNAMIC RANGE OF INPUT SIGNALS (UP TO 1000), AND THE CONSERVATION OF THE PERFORMANCE CHARACTERISTICS AT HIGH COUNTING RATES PROVIDED A HIGH EFFICIENCY FOR APPLYING THE INSPECTOR TO THE PRECISION SPECTROMETER CHANNEL WHEN PULSES ARE SHAPED WITH RC FILTERS. FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--2300170
TITLE--DENSITY OF TALL OIL PRODUCTS -U-
AUTHOR-(02)-ZAVOZCHIKOVA, V.V., ANUCHIN, P.I.
COUNTRY OF INFO--USSR
SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970, 23(2), 8-10
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CHEMICAL COMPOSITION, PHYSICAL CHEMISTRY PROPERTY, WOOD
CHEMICAL PRODUCT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/2033 STEP NO--UR/0328/70/023/002/0004/0010
CIRC ACCESSION NO--AP0122262

MULTI LITTING

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122262

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EMPIRICAL FORMULA WAS DERIVED FOR CALCN. OF THE D. OF TALL OILS AS A FUNCTION OF THE TEMP. AND CONTENT OF ROSIN ACIDS (I), AND CONVERSELY, THE CONCN. OF I WAS DETD. WHENEVER THE D. AND TEMP. WERE KNOWN. THE OS. OF TALL OIL PRODUCTS MANUFD. BY THE KUTLASS PULP PAPER MILL AND BRATSK FOREST PRODUCTS ENTERPRISES ARE TABULATED.

USSR

UDC: 533.6.011

ANUCHINA, N. N.

"On Methods of Calculating Flows of Compressible Liquid With Large Deformations"

Chisl. metody mekh. sploshn. sredy. Inform. byul. (Numerical Methods in Fluid Mechanics. Information Bulletin), 1970, 1, No 4, pp 1-84 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B304)

Translation: The paper presents a detailed exposition of the method of particles in cells proposed by Harlow for numerical computation of plane and axisymmetric flows of an inviscid thermally nonconductive gas. This method is treated as a modification of the method of splitting. The region of integration is broken up by a fixed Euler net into cells which are filled with a certain number of particles. A system of gasdynamic equations which are taken in divergent form in Euler variables is split into two auxiliary systems. In the first system, transfer processes are not considered, the change of gasdynamic functions in the cell being due to the work of pressure forces on the cell boundaries. The second system describes the change of functions in the cell due to their flow through a

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ANUCHINA, N. N., Chisl. metody mekh. sploshn. sredy. Inform. byul., 1970, 1, No 4, pp 1-84

boundary; a particle model which preserves contact surfaces is used for solving this system. At each step in time, these two systems are solved sequentially by means of difference schemes. For the first system, modifications of the difference scheme are considered which make it more stable and monotonic. A difference scheme of complete time step is defined, it is shown that it approximates the initial system of differential equations in the case of an infinite number of particles, and its stability is studied. The algorithm of the method is described in detail, the singularities of the computation are analyzed together with boundary effects, the accuracy of the method is evaluated, and its advantages and disadvantages are pointed out. The applications of the method of particles in cells are illustrated by solution of three two-dimensional gasdynamic problems: interaction of a shock wave with a deformable object inside the flow, axisymmetric motion of the interface between two gases with an applied perturbation, and motion of two gases under the effect of applied pressure, where the gases are initially quiescent and occupy axisymmetric volumes one within the other.

P. I. Chushkin.

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1/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--MEASUREMENT OF THE CONCENTRATION OF OXYGEN DISSOLVED IN TANTALUM
-U-
AUTHOR--(05)-ANUCHKIN, A.M., VOLKOV, A.K., KIDIN, I.N., ROZHNova, T.M.,
SHTREMEL, M.A.
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ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DETN. OF THE CONC. OF INTERSTITIAL SOLID SOLNS. IN REFRACTORY METALS ON THE BASIS OF THE RESIDUAL ELEC. RESISTANCE IS FASTER THAN THAT BASED ON CELL PARAMETERS, AND OFTEN MORE RELIABLE THAN METHODS USING VACUUM FUSION OR VACUUM EXT. TO AVOID ERRORS RESULTING FROM THE GEOMETRY OF THE SPECIMENTS, THE PARAMETER EMPLOYED IS CHI, THE RATIO OF THE RESISTANCES AT 2 TEMPS., CHI IS A NONLINEAR FUNCTION OF THE CONC., BUT THE FUNCTION Z EQUALS $(CHI - 1)$ PRIME NEGATIVE IS A LINEAR FUNCTION OF THE CONC. C IS THE MATTHIESSEN RULE IS OBEYED. THE RELATION Z EQUALS $\alpha + \beta C$ IS EVEN MORE WIDELY VALID WITHIN ADEQUATE LIMITS OF ACCURACY. TA STRIPS CONTG. TRACES OF Nb, Mo, AND Fe WERE ADDNL. PURIFIED BY PULSE HEATINGS (4-7 SEC) IN HIGH VACUUM (BELOW THE M.P.) AND THE RESISTIVITY MEASUREMENTS WERE MADE AT 293DEGREESK AND 77DEGREESK BY A POTENTIOMETRIC METHOD. INITIAL VALUES OF 2.71-3.50 FOR THE RATIO CHI INCREASED TO 4.60-5.33 AFTER PURIFICATION. SAMPLES WERE DEGASSED, AND THEN SATD. WITH O FOR 5-30 MIN AT 1100DEGREESK UNDER PRESSURES OF 2-4 TIMES 10 PRIME NEGATIVE 3 TORR, AND O WAS THEN REMOVED AT A PRESSURE SMALLER THAN 5 TIMES 10 PRIME NEGATIVE 5 TORR. CONC. WAS DETD. BY 3 METHODS: GRAVIMETRIC, LATTICE PERIOD, AND RESISTANCE AT 20DEGREESK. THE 3 METHODS GIVE COMPATIBLE RESULTS.

UNCLASSIFIED

USSR

UDC 621.643.001.2

ZAYTSEV, K. I., and ANUCHKIN, M. P.

"The Role of Deformation Fields at Spontaneous Crack Growth Along the Pipe Line"

Moscow, Stroitel'stvo Truboprovodov, No 7, Jul 73, pp 9-10

Abstract: A qualitative study is made of the mechanism of crack motion and the sources of the changing direction of its propagation, its branching and damping. The spontaneous breakdown is caused by an open crack; in front of the developing crack moves a field of elasto-plastic strain with a velocity equal to the propagation velocity of the crack. This field is in its way an indicator of the further crack development; by changing the character of the field, the character of the moving crack, as its turning or branching, can be influenced. In this way, the spontaneous longitudinal breakdown of pipe-lines can be localized by creation of special zones representing fields with lowered stresses or stresses with other sign than that of the field moving in front of the crack. By the control of this field, the development of cracks can be influenced and a spontaneous breakdown of the construction can be prevented to a considerable extent. Four figures.

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USSR

UDC 621.643.001.5

BORISOV, P. P., SURENOVA, V. M., IVANOV, A. G., DAVYDOVA, L. N., and
RUSSIYAN, A. V., VNIImontazhspeksstroy [All-Union Scientific Research Insti-
tute for Installation and Specialized Construction Operations]; ~~ANICHKIN,~~
~~M. P., VNIIST~~ [All-Union Scientific Research Institute for the Construction
of Trunk Pipelines]

"Increasing the Breaking Strength of 17G1S Steel by Treating It With Synthetic
Slags"

Moscow, Stroitel'stvo Truboprovodov, No 7, Jul 71, pp 26-28

Abstract: The article describes results of a study at VNIImontazhspeksstroy
on the ability of specimens of 17G1S steel, refined in a ladle with synthetic
slag, to resist the propagation of static and dynamic bending cracks in the
stressed state. For comparison, a study was also made of specimens of the
steel which had not been refined with synthetic slag. It was found that
treatment of 17G1S steel with synthetic slag in a ladle increases the crack
initiation and propagation energy under all testing conditions and hence the

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KORINOV, P. P., et al., Stroitel'stvo Truboprovodov, No 7, Jul 71, pp 26-28

total energy to fracture. The treated steel is characterized by high resistance to crack propagation in the stressed state at low temperatures. The operating reliability of gas pipelines can be increased by using treated 17818 steel.

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USSR

RUBINOV, A. N.; ANUFRIK, S. S.

"Possibility of Dynamic Compensation of Thermo-optical Distortion in the Resonator of a Liquid Laser"

Minsk, Zhurnal Prikladnoy Spektroskopii; July, 1972; pp 33-7

ABSTRACT: Experimental data are presented for a 62h rhodamine laser with laser pumping showing the possibility of dynamic compensation of thermo-optical losses in the resonator of a liquid laser. A decrease in this type of loss was obtained by the insertion in the resonator of an additional cuvette containing a dye which absorbs the pumping radiation but not the generated radiation. Pumping of the laser and the additional cuvette was accomplished simultaneously by light pulses with a duration of ~ 110 μ sec. Under controlled conditions thermo-optical distortion arising in the additional cuvette during the pumping action compensates the distortion developing in the active medium of the laser. In the optimal case it is possible in this way to increase the total stabilized energy by 40%.

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